OVERVIEW

The TS-7800 is a RoHS compliant Single Board Computer (SBC) based on a Marvell 500MHz ARM9 CPU with internal PCI bus and that provides a standard set of on-board peripherals such as Gigabit Ethernet, dual SATA and dual High-Speed host/slave USB 2.0.

The TS-7800 also features a 12,000 LUT on-board Lattice FPGA which is programmable via Linux software and provides extra peripherals such as 110 GPIO lines and additional serial ports.

On the software side, the TS-7800 uses an in-house improved Linux 2.6 Kernel that allows 0.69 second bootup and provides driver support for all on-board hardware. In addition, the 512 MB on-board Flash enables a full Debian distribution to be installed with a complete embedded development environment.

The TS-7800 is backward compatible with our TS-72xx computers, providing 3 times more performance and higher-end features with identical footprint, thus allowing quick platform migration for customer applications.

FEATURES

- 500MHz ARM9 CPU
- Internal PCI bus, PC/104 connector
- 12,000 LUT programmable FPGA
- 128MB DDR-RAM
- 512MB NAND Flash, high-speed (17MB/s)
- 2 SD socket (1 micro-SD, 1 full-size SD)
- 2 SATA ports
- 2 USB 2.0 480Mbps host ports
- Gigabit Ethernet, 10/100/1000 speeds
- 5 10-bit ADC channels
- 10 serial ports, 2 optional RS-485
- 110 GPIO (86 arranged as a PC/104 bus)
- Sealed-battery backed RTC
- Matrix Keypad and Alphanumeric LCD interfaces
- Fanless: -20°C to +70°C
- Optional on-board Temperature Sensor
- Low power 4W@5V
- Sleep mode uses 200 microamps
- Optional 8-30V input voltage range (default is 5V)
- Boots to a Linux shell-prompt in 0.69 second
- Runs Kernel 2.6 and Debian Linux by default

Unbrickable design

3x faster and backward compatible with TS-72xx

FAST BOOTUP Firmware

The TS-7800 bootstrap uses a unique and clever combination of FPGA hardware logic, specific boot-up firmware and Kernel tweaks which ensure fast boot time, security, high board recoverability and more:

- Linux-based bootloader boots Linux 2.6 kernel to shell-prompt in less than 1 second after power-on from either SD card or on-board Flash
- Full Debian can be installed into on-board Flash from a USB flash dongle - no need for Busybox
- Unbrickable design ensures 100% recoverability from SD card in case of on-board Flash erase

12,000 LUT FPGA

- Connects to CPU via 50Mhz local PCI bus
- Default load uses GPIO pins as a PC/104 bus
- Enables fast board modification or feature improvement via FPGA load customization

LinuX 2.6 and DEBIAN

The TS-7800 is shipped with Linux Kernel 2.6 and the Debian distribution on-board Flash, enabling a wide range of server services, desktop-like applications and development tools to run on a embedded real-time system.

We have been in business over 20 years!

We've built our business on excellent products, low prices and exceptional support. We sell a wide variety of off-the-shelf PC/104 SBC's and peripherals, and offer custom configurations and designs with excellent pricing and turn around time.

Technologic Systems has never discontinued a product. You can count on long term availability when you include our SBC's and peripherals in your design.

© Jun. 2009